



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
|-----------------|-------------|----------------------|---------------------|------------------|

10/084,182

02/28/2002

Junji Nakanishi

2185-0623P-SP

4912

2292 7590 06/28/2007  
BIRCH STEWART KOLASCH & BIRCH  
PO BOX 747  
FALLS CHURCH, VA 22040-0747

EXAMINER

LEE, SIN J

ART UNIT

PAPER NUMBER

1752

NOTIFICATION DATE

DELIVERY MODE

06/28/2007

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

|                              |                        |  |                     |  |
|------------------------------|------------------------|--|---------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b> |  | <b>Applicant(s)</b> |  |
|                              | 10/084,182             |  | NAKANISHI ET AL.    |  |
|                              | <b>Examiner</b>        |  | <b>Art Unit</b>     |  |
|                              | Sin J. Lee             |  | 1752                |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 16 April 2007.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,3-6 and 11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3-6 and 11 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

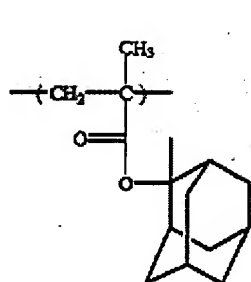
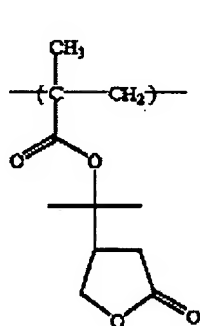
**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

### DETAILED ACTION

1. Claims 1, 3-6 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kodama et al (US 6,291,130 B1) in view of Ishikawa et al (4,671,854).

In Example 3, Kodama teaches a positive photosensitive composition containing Resin (P2), triphenylsulfonium triflate and 1,5-diazabicyclo[4,3,0]non-5-ene (a hindered amine) (see Table 1 and Table 4). Kodama's Resin (P2) contains the following repeating units (see col.14, lines 55-65 and col.35, lines 45-55):



Therefore, Kodama teaches present invention of claim 1 except for present component (D). Kodama teaches that the taught photoresist composition may further contain other additives such as plasticizer (see col.84, lines 50-55). Kodama does not provide specific examples of suitable plasticizer. One of ordinary skill in the art would have been motivated to use a plasticizer which is well-known and conventional in the art of

Art Unit: 1752

photoresist materials. Adipates such as dioctyl adipate (another name for di-n-octyl adipate), sebacates, azelates, maleates and citrates are well known in the art as plasticizers used in a photosensitive resin composition for improving film-forming property of resin and improving flexibility of the coated film as evidenced by Ishikawa et al, col.4, lines 46-64. It would have been obvious to one skilled in the art to use adipates such as dioctyl adipate as Kodama's plasticizer in his photosensitive composition in order to improve film-forming property of resin and flexibility of the coated film. Therefore, Kodama in view of Ishikawa et al would render obvious present inventions of claims 1, 3, 5, 6 and 11.

With respect to present claim 4, Kodama teaches that his resin can furthermore contain one or more other monomer units in order to improve characteristics of the resin (col.57, lines 1-6), and as one of *preferred* examples of such monomer units, Kodama teaches hydroxystyrene monomer unit (col.58, lines 46-54) which increase the alkali solubility of the resin. Therefore, it would have been obvious to one skilled in the art to further include a hydroxystyrene monomer unit in Kodama's Resin (P2) in order to increase alkali solubility of the resin as taught by Kodama. Therefore, Kodama in view of Ishikawa et al would render obvious present invention of claim 4.

### ***Response to Arguments***

2. Akita's declaration was considered carefully but was found to be unpersuasive to show unexpectedly superior results of present invention because the comparison was not made tot the closest prior art (i.e., Kodama's Example 3). See MPEP 716.02(e) (also, it seems that the "unexpected results" of the Examples 3 and 4 compared with

Art Unit: 1752

Comparative Example 1 occur only when using 0.12 um line and space mask).

Applicants argue that there is no basis to combine Kodama'130 with Ishikawa'854;

Applicants argue that Kodama's composition does not appear to employ a chelating agent for the purpose of reacting with copper ions liberated during anionic

electrodeposition as required by the Ishikawa's composition and that Ishikawa fails to disclose or suggest any of the specified components (A) or (B) requiring a structure

represented by formula (I), (II) and (III) as required by Kodama'130. However, as

previously argued by the Examiner, a plasticizer is an additive conventionally used in a photoresist composition, and since Kodama clearly teaches that his composition may

further contains additives such as plasticizer, one skilled in the art would have found enough motivation to use a plasticizer in Kodama's composition. Also, Ishikawa is a

reference cited by the Examiner to shows that adipates (such as dioctyl adipate),

sebacates, azelates, maleates and citrates are well known plasticizers used in a

photosensitive resin composition for improving film-forming property of resin and

improving flexibility of the coated film. Since Kodama does not name any specific

plasticizer, *in the absence of showing of unexpectedly superior results of present*

*invention*, it is still the Examiner's position that it would have been obvious to one skilled

in the art to use adipates (such as dioctyl adipate), sebacates, azelates, maleates and

citrates, which are well known plasticizers (as shown by Ishikawa) used in a

photosensitive resin composition for improving film-forming property of resin and

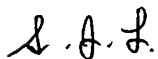
improving flexibility of the coated film, in Kodama's composition.

For the reasons stated above, present rejection over Kodama et al'130 in view of Ishikawa et al'854 still stands.

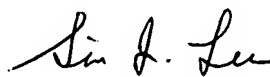
3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sin J. Lee whose telephone number is 571-272-1333. The examiner can normally be reached on Monday-Friday from 9:00 am EST to 5:30 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cynthia Kelly, can be reached on 571-272-1526. The fax phone number for the organization where this application or proceeding is assigned is **571-273-8300**.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



S. Lee  
June 22, 2007

  
**SIN LEE**  
**PRIMARY EXAMINER**